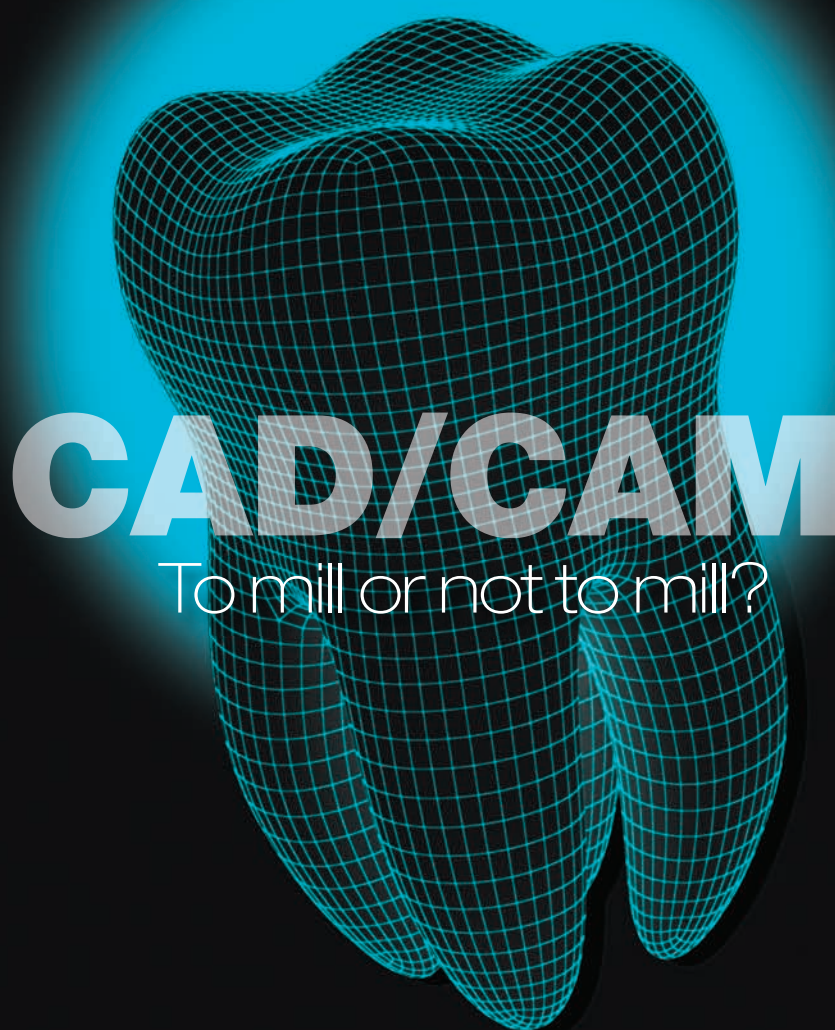


THE DENTAL ADVISOR

Improving Patient Care Through Research & Education

March 2016

Vol. 33, No. 02



Going digital can mean very different things to individual practitioners and laboratories. There are, however, key aspects of both groups that must be evaluated similarly before adopting digital technologies. This issue describes these core considerations and provides the reader with questions specific to their business operations. Materials available for in-office milling are discussed. This issue also features a Translating the Science report, which outlines laboratory testing performed in THE DENTAL ADVISOR Biomaterials Laboratory (in conjunction with The Texas School of Dentistry at Houston). This research explains the clinical relevance of translucency parameter as related to flexural and compressive strength of various ceramics.

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www.dentaladvisor.com

RATINGS :

Excellent	+++++
Very Good	+++
Good	++

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From the Desk of Dr. Bunek, Editor-in-Chief



Each year we dedicate a special issue to CAD/CAM technology or Digital Impressions. In years past, the content was geared toward the actual process of a digital impression or as a guide to help decipher between the different scanners and mills. As dental professionals have gained experience with the adoption of digital technologies we have found that dentists and laboratories face many similar challenges. Who on your team possesses the required skill set to take on new tasks, what materials are available for use, and what changes in scheduling or workflow will be required are some questions we must all ask.

In this month's issue we address the influence of key considerations on purchasing decisions. For instance if I am considering purchasing an in-office mill, do I have a trusted team member to take on design, staining and glazing and equipment maintenance? If I am a laboratory, and I want to accept digital files, do I have a team member who has the skill set required for digital design? Answering these questions will help guide you as you decide how and when to incorporate digital technology into your lab or office. As always, I welcome your comments and suggestions; you can reach me at drbunek@dentaladvisor.com.

common considerations for the dental practice and dental laboratory

dental practice



dental laboratory



available materials



workflow & turn-around time



tech-savvy CAD designers



Dental Office:

Seven questions to consider before purchasing an in-office mill . . .

1. What materials are you using for indirect restorations (i.e. lithium disilicate, zirconia)?

Different mills are validated for certain materials, and milling zirconia in-office typically requires additional equipment.



2. How many indirect restorations are you seating per month and what is your monthly lab bill?

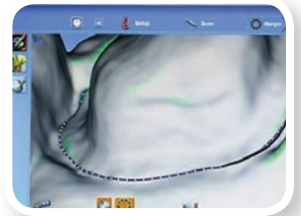
This can help determine ROI for a mill purchase in your practice. Clinicians often believe that purchasing a mill will save money on monthly lab bills; however, time to fabricate crowns as well as expense of necessary equipment and monthly service fees is a consideration.

3. Can you send digital files to your current laboratory to be milled?

Several options are available for a practice to digitize at different points throughout the workflow. Intra oral scanners or impression scanners can create an .stl file which can be sent to the laboratory, avoiding model fees (in some cases), and decreasing turn-around time.

4. How computer savvy are your clinical assistants?

Using CAD/CAM software is a new skill for most assistants. It takes time and skill to master 3D design. Training time must be considered outside of your clinical schedule.



5. How experienced are your clinical assistants in laboratory work?



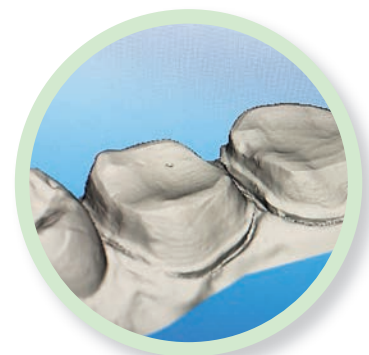
Many materials for in-office milling must be fired, stained and glazed. This requires not only the purchase of additional materials and equipment, but the knowledge of how to create an esthetic restoration.

6. Has implementation of major technology into your practice been successful in the past?

If your team is not ready for change, CAD/CAM technology may not be successful in your practice.

7. Are you prepared to modify your schedule?

CAD/CAM used in a dental practice requires initial training, has a learning curve, and will affect the way your practice schedule operates. Many practices have a dedicated assistant who acts as a CAD designer and CAM operator, completing the restorations. However, the appropriate time to complete the additional tasks must be allotted.



Materials Available for in Office Milling

	IPS e.max CAD	IPS Empress	Lava Ultimate	Enamic	CERASMART	BruXZir Now	Obsidian	inCoris TZI	Triluxe Forte	Vitamark II	CELTRA Duo	TELIO CAD	Zirlux FC2
	Ivoclar Vivadent	Ivoclar Vivadent	3M	Vita	GC America	Glidewell	Glidewell	Sirona	Vita	Vita	Dentsply/ Caulk	Ivoclar Vivadent	Zahn
CEREC MCX, MCXL	X	X	X	X	X			X	X	X	X	X	
PlanMill 40	X	X	X									X	X
TS 150			X	X		X	X						
Carestream CS3000			X							X			

Q. Can any block that fits my mill be used?

A. There are many blocks available that will fit a machine; however, not all are validated and using a block that does not have a correlated, validated program may affect the quality of the restoration.



The speed at which a bur (or tool) turns, the speed at which it moves through the material, and even the amount of material removed with each cut are carefully controlled for optimal performance while milling a specific material. Going too fast, too slow or cutting away too much material can damage the restoration resulting in fractures or chips, damage the bur causing short life, cause bad fits or broken tools, and could even damage the motors inside the mill.

Validated materials have gone through extensive testing to make sure the milling programs are tested for optimal milling performance and equipment service life.

Q. Can we mill Zirconia in our practice?

A. Yes, there are currently a few different ways to do so. The first, is to invest in a **TS150™** Mill (IOS Technologies), which can mill **BruXZir® NOW**. This new material does not require a separate sintering oven, nor does it require additional staining and glazing. However, the mill is limited to milling **BruXZir NOW** and **Obsidian** Lithium Silicate (Glide-well Dental Laboratories), as well as **VITA Enamic** and **Lava Ultimate** (3M) resin ceramics. The other alternative is to invest in a **CEREC MCXL** which can mill full-contour zirconia, but the zirconia must be sintered in a separate fast firing oven (**CEREC SpeedFire**) and an additional upgrade is necessary for the mill to work properly. The **SpeedFire** oven is only available with the initial purchase of the entire CEREC package; current CEREC owners cannot purchase it separately at this time. As for **PlanMill 40**, **Zirlux FC2** (Zahn) can be milled but it also must be fired separately. The advantage of a **CEREC MCXL** (Sirona) and the **Plan-Mill 40** (Planmeca) is that both can mill **IPS e.max** and **IPS Empress** (Ivoclar Vivadent), two very popular restorative materials.



TS150™ Mill
IOS Technologies
858-202-3360
www.ios3d.com



Description: The **TS150™** from IOS Technologies enables clinicians to mill in-office, same-day crowns that seat with precision. The unit's powerful air-driven 150,000-rpm spindle is combined with a patented orbital milling strategy to ensure excellent marginal integrity of the final restoration, making it simple to achieve decisive clinical results in the office. With average cases being completed in less than 90 minutes, the **TS150** is an affordable solution for clinicians looking to significantly reduce their case turnaround time. For more information, visit www.ios3d.com.

BruXZir® NOW
Glidewell Dental Laboratories
800-854-7256
www.glidewell dental.com



Description: **BruXZir® NOW** is a pre-shaded, fully sintered zirconia milling block system used in the manufacture of single-unit chairside restorations that exhibit flexural strengths greater than 800 MPa. Compatible with the **TS150™** in-office mill and available in **14 VITA® Classical** shades, crowns made from **BruXZir NOW** blocks can be designed, fabricated, and made ready for placement in less than an hour, without the need for sintering, staining or glazing. For more information about this fully sintered, chairside material, visit www.bruXzir.com or call 888-303-3975.

Dental Laboratories:

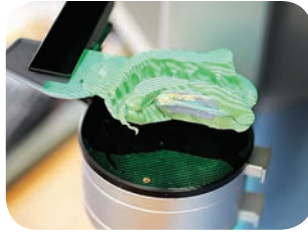
Six questions to ask before going digital . . .

1. How many crown/bridge units are you fabricating per month and what materials are most requested?

This will help in deciding which mill, if any, is appropriate for your laboratory and which services require outsourcing.

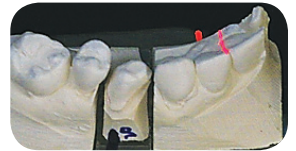
2. Are you currently pouring impressions and fabricating a stone model?

Steps can be saved by purchasing a scanner for your laboratory; current scanners are sold with a design software package. Some can scan impressions as well as models.



3. Do you have a scanner? Can it scan both impressions and models?

The most versatile laboratory setup will allow dental offices to send digital impression files or a physical impression, either to be poured or scanned.



4. Are you pressing ceramics and how are wax copings currently made?

Wax copings can be designed and milled either in your laboratory or outsourced to a milling center.

5. Is your team ready for the changes in workflow and skilled in new techniques?

Many new materials require care in sintering, firing, staining, glazing and finishing. It is critical for technicians to understand differences between materials.

6. Do you have a partnership with a milling center?

It is a good idea to measure cost of equipment and training time and compare it with the cost of outsourcing to a milling center partner.



BruxZir® Anterior
Glidewell Dental Laboratories
 800-854-7256
www.glidewelldental.com

Description: **BruxZir® Anterior** is a new, esthetic advancement in the **BruxZir Solid Zirconia** family of products. This natural-looking restorative material is designed specifically to satisfy the esthetic and functional requirements of the anterior region of the mouth. Exhibiting an average flexural strength of 650 MPa with translucency and color similar to natural dentition, **BruxZir Anterior** restorations are fabricated using CAD/CAM technology to ensure a precise fit. For more information about this highly esthetic material, visit www.bruxzir.com or call 800-854-7256.



Obsidian® Lithium Silicate Ceramic
Glidewell Dental Laboratories
 800-854-7256
www.glidewelldental.com

Description: **Obsidian®** lithium silicate ceramic is a state-of-the-art material system that supports a comprehensive range of indications and categories, with pressed-to-metal, all-ceramic and chairside versions available. Designed and manufactured with the latest digital technologies, **Obsidian** restorations deliver premier esthetics, lasting function and precise fit. This extensive system allows dental professionals to easily match the lifelike vitality of natural dentition across a variety of case types. For more information, visit www.obsidiantceramic.com or call 800-854-7256.



Translucency Parameter and Flexural Strength and Modulus of Various CAD-CAM Materials

R. Yapp, MS, M. Cowen BS, S. Bunek, DDS, R. Paravina, PhD, and J. Powers, PhD

What is Translucency Parameter (TP)? It is a material property related to translucency (ability to transmit light) that is essential to the esthetics of dental restorations.

What is a satisfactory TP value? TP values in the high twenties have been judged to provide esthetics similar to teeth.

Are TP values improving for zirconia? Efforts to improve the TP of zirconia products have yielded a technological evolution over the past 10 years creating evermore translucent and esthetic versions of this popular high-strength restorative material.

How were these improvements made and has it affected the strength? Zirconia with greater translucency was achieved by making small changes to the composition, which in turn changed its crystal structure to one which transmitted light more effectively. Although zirconia is considerably stronger than other common restoratives, achieving higher translucency has come with some drop in strength. The following results are presented to show the variety of high TP materials, which are not only esthetic, but also sufficiently strong to play a significant role in all applications of restorative dentistry.

Test Methods

Postage stamp size specimens were cut from blocks of the various CAD-CAM materials, and ground to final thicknesses of 0.5 mm and 1.0 mm. TP is measured for two thicknesses because the change in TP with thickness is often not linear. A spectrophotometer (X-Rite, Ci 7600-see photo right) was used to shine a beam of light on the specimen while a sensor measured the amount of light that penetrated through the specimen. The TP was calculated from the measurements made by the instrument. The flexural strength and modulus were determined by loading 2 x 4 x 25 mm beams of the material in a 3-point bending jig until they fractured.



Results

A variety of CAD/CAM materials were tested in our laboratories. Results for selected products are presented below.

Product Name	Company	Translucency Parameter		Flexural Strength, MPa	Flexural Modulus, GPa
		0.5 mm	1.0 mm		
Zirconia					
Origin Beyond (OB)	B&D Dental Corporation	18.0 (0.3)	10.8 (0.5)	802 (61)	144 (2)
Lithium Disilicate					
IPS e-max CAD (EM)	Ivoclar Vivadent, Inc.	26.2 (2.6)	17.9 (0.5)	363 (63)	65 (3)
Resin Ceramic					
Cerasmart (CS)	GC America	30.7 (1.3)	21.2 (0.4)	188 (8)	6.6 (0.1)
Feldspathic Porcelain					
VITABLOCKS Mark II (M2)	Vita North America	24.2 (0.3)	16.9 (1.1)	114 (3)	29 (3)
Resin Composite					
Filtek Supreme Ultra	3M	26.9 (1.4)	19.0 (0.7)	146 (7)	10.7 (0.3)

RAMVAC® Slugbuster™ Evacuation System Cleaner Comparison Study

Purpose:

1. To evaluate the cleaning effectiveness of *RAMVAC® Slugbuster™* evacuation line cleaner compared to a competitor product when utilized for 6 months in an active dental practice.

MATERIALS:

- *RAMVAC Slugbuster* (DentalEZ®)
- *RAMVAC Slugbuster* mixing container
- *Monarch Cleanstream Evacuation System Cleaner* (Air Techniques)
- *Monarch Cleanstream* dispenser
- 4 Dental operatories



Methods

In a well-established dental practice, four operatories were assigned one of two evacuation line cleaning systems (*RAMVAC Slugbuster* or *Monarch Cleanstream*). New evacuation tubing was installed in each operatory prior to the initiation of the study (Figure 1). Participating dental staff were provided with test evacuation line cleaning material the associated mixing/dispensing system, and instructed on use of each cleaning solution as per manufacturers' instructions (daily for 6 months). One-inch samples of treated evacuation lines were collected at 2, 4, and 6 months. At each time interval, test specimens were visually inspected and photographed.

Figure 1. Clean, untreated evacuation line.

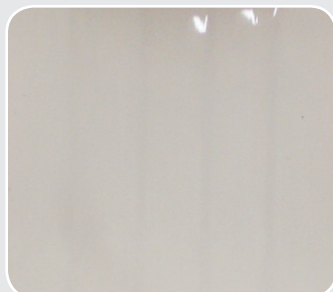
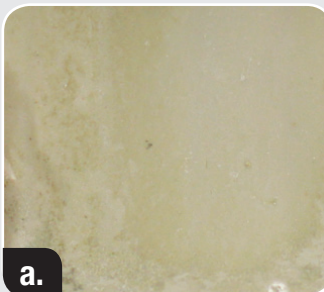


Figure 2. Representative photos of evacuation lines treated for 2 months, a. *RAMVAC Slugbuster* b. *Cleanstream*



Results

At the 2 month test period, **RAMVAC Slugbuster** and **Monarch CleanStream** performed in similar manner with little to no accumulation of organic debris (Figure 2). Performance differences were noticeable after 4 months of treatment (Figure 3). Little accumulation (less than 10%) was observed in those lines treated with **Monarch CleanStream**. At the completion of the study (6 month treatment), little to no accumulation of organic debris (less than 5%) was observed with every day use of the **RAMVAC Slugbuster** cleaning system (Figure 4).

In contrast, lines exposed to **Monarch CleanStream** cleaning system, when utilized in the same manner, demonstrated more accumulated debris. It should be noted that both lines treated with **Monarch CleanStream** demonstrated visible differences in bioburden accumulation. However, both lines still contained an average of 75% more build-up of organic debris than lines treated with **RAMVAC Slugbuster**.

Figure 3. Representative photos of evacuation lines treated for 4 months, a. **RAMVAC Slugbuster** b. **Cleanstream**

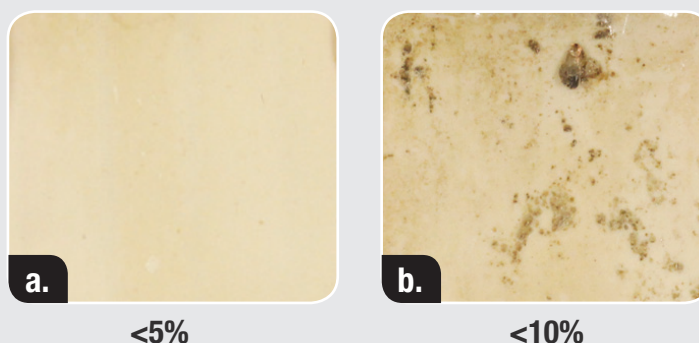
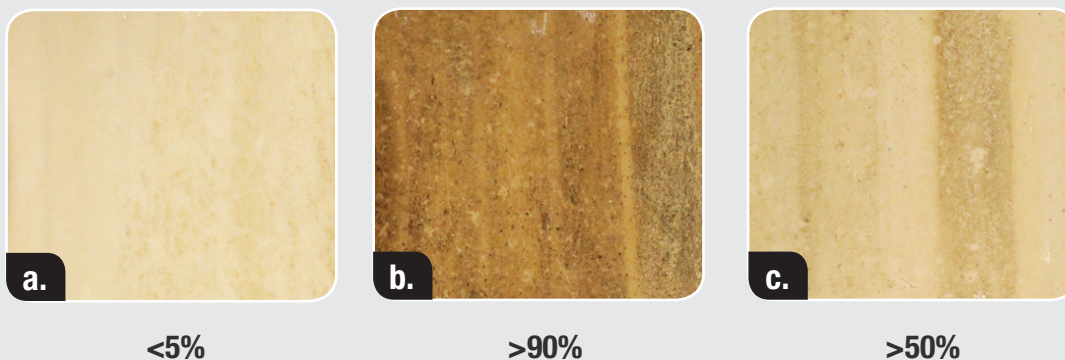


Figure 4. Representative photos of evacuation lines treated for 6 months, a. **RAMVAC Slugbuster** b-c. **Cleanstream**



Conclusion

In this study we incorporated two evacuation cleaning systems into a dental practice's daily routine in order to compare their cleaning effectiveness. For the first 2 months both cleaning systems performed in a similar manner allowing for little or no buildup of organic debris. After the 4-month testing interval, **RAMVAC Slugbuster** demonstrated that it was able to inhibit bioburden accumulation in the evacuation lines to a greater extent than the **Monarch CleanStream** cleanser.

Pro-Matrix

++++ 1/2

Medicom, Inc.

www.medicom.com

Description

Pro-Matrix are single-use bands used in placing Class II direct restorations. Each band is pre-assembled in a plastic retainer with a tightening mechanism. Bands are available in two sizes: Wide 6.5 mm and Narrow 4.5 mm. A sliding deflector is adjusted to constrict the cervical side of the band, making each unit universal for use in any quadrant. **Pro-Matrix** was evaluated by 32 consultants in 843 uses. This matrix band received a 91% clinical rating.



Suggested Retail Cost

Box of 50: \$50.00

Product Features

Pro-Matrix is simple for dental assistants to set up and is ready to use right out of its individual cellophane wrapper. It slides easily over the tooth, and the retainer handle is smooth against the patient's cheek. Colored handles (blue and green) provide clear visualization of wide or narrow size. The deflector slides smoothly to narrow the cervical side of the band, and the tightening mechanism adjusts effortlessly to snug the band around the tooth. The adjustment screw is completely enclosed within the plastic housing, protecting patient's soft tissues from trauma. The **Pro-Matrix** band is less contoured than traditional bands and performs best in cases with a narrow interproximal space.

Consultants' Comments

"Easier to adjust than traditional metal matrix retainers."

"No set up! It's so easy to use, no chance of setting up band incorrectly."

"Ready to go and disposable."

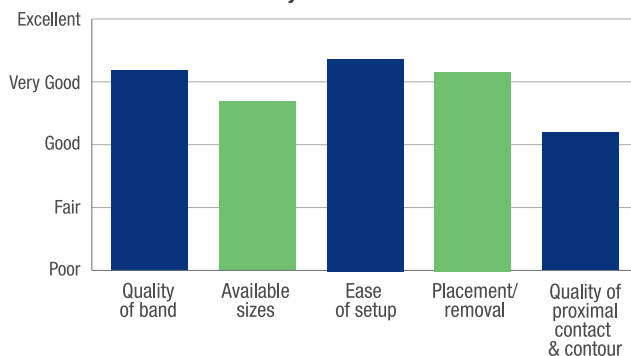
"I will keep these on hand to use when I don't need a sectional band."

"Ideal for pedo cases, cores and small restorations."

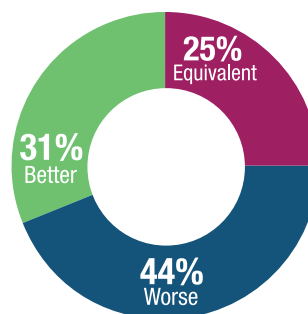
"Bands are a bit thick and stiff; a soft option would be good for composite restorations."

"Provide an extra-wide size."

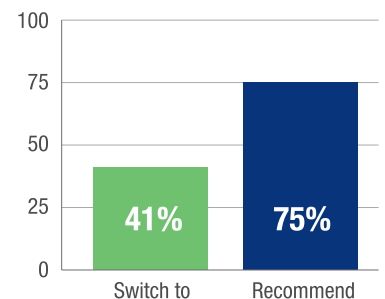
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:





Glidewell Laboratories

(800) 854-7256 USA
(888) 278-0414 Canada
www.glidewell dental.com

Purpose

The purpose of this evaluation is to report on the clinical performance of *BruxZir Solid Zirconia Crowns and Bridges* at four years.

Clinical Evaluation Protocol

A total of 1,392 *BruxZir Solid Zirconia Crowns and Bridges* restorations have been placed over the past 56 months. Nine hundred and thirteen (913) restorations were recalled over four months including: single crowns (84%), 7% of which were implant crowns, and 16% that were 3- and 4-unit bridges (Figure 1). Of the 913 recalled restorations, 5% were anterior crowns and 95% posterior crowns.

All restorations were cemented with adhesive and self-adhesive resin cements. The majority (85%) of the restorations were fabricated by Glidewell Laboratories, while 15% were fabricated by Apex Dental Milling. Of the 913 recalled restorations, 18% were over 4 years old, 35% were between 3 and 4 years old and the remaining 47% were less than 3 years old.



BruxZir received a
**98% clinical
performance rating
at 4-year recall.**

Clinical Evaluation Protocol

BruxZir Solid Zirconia Crowns and Bridges restorations were evaluated in the following categories: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, and wear of zirconia and opposing dentition.

Fig. 1: Distributions of Restorations at 4-year Recall.

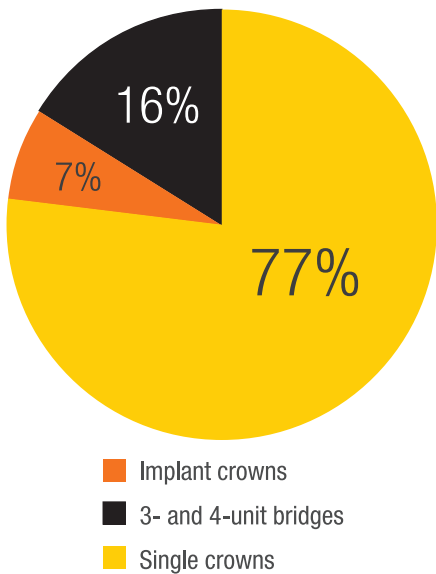


Fig. 2: Age of Restorations at 4-year Recall.

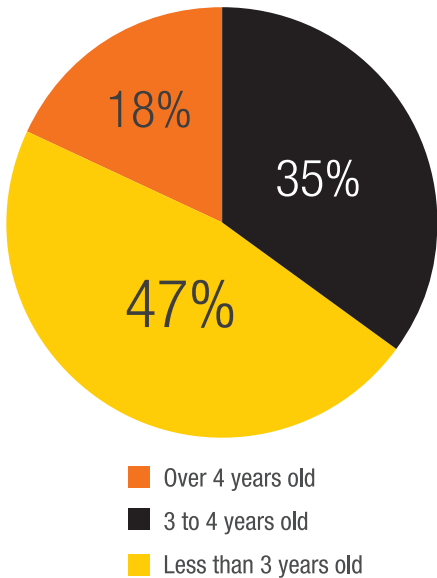
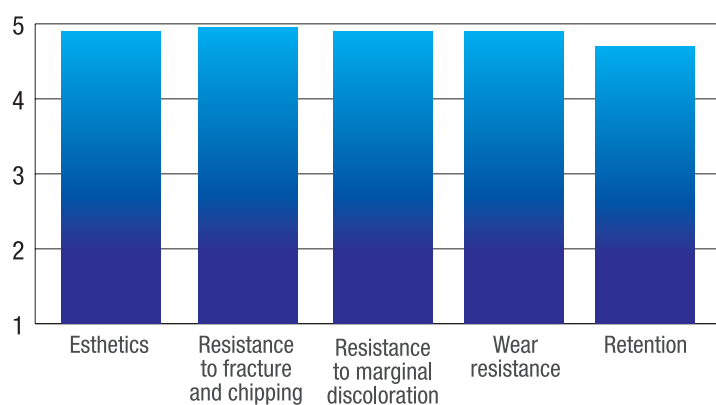


Fig. 3: Results of *BruxZir Full Zirconia and Bridges* at 4-year Recall.



Restorations were evaluated on a 1-5 rating scale:
1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

■ ***BruxZir is an excellent crown material; crowns look good, and so far I have had no failures after four years of regular use.***

■ ***Great implant crowns - they are opaque enough to mask the metal abutment but still look good.***

■ ***I love the way three- and four-unit bridges fit and look.***

■ ***No fractures at four years.***

Clinical Observations

Esthetics

The esthetics of *BruxZir Solid Zirconia Crowns and Bridges* was rated excellent (Figure 3), based on the consistency of the shades and a comparison of the esthetics to other monolithic zirconia restorations. *BruxZir* tends to be less opaque than other zirconia restorations. Only 19 (2%) of the *BruxZir* restorations received a rating of 4. *BruxZir* restorations were not compared with layered ceramic restorations. *BruxZir* restorations are perfect for patients looking for more monochromatic and whiter teeth. The new *BruxZir* 16 pre-shaded zirconia and Anterior *BruxZir* further improve esthetics. Note: THE DENTAL ADVISOR is now beginning a one-year recall of *Anterior BruxZir* restorations.



BruxZir bridge at 4 years.

Resistance to Fracture/Chipping

Chipping and fracture of *BruxZir Solid Zirconia Crowns and Bridges* single crowns have been practically non-existent (Figure 3); three failures (0.3%) were observed. A second molar crown fractured, but failure was likely due to a lack of occlusal clearance and insufficient reduction. Having less than 1 mm of clearance is not recommended for molars. Two implant crowns on lower second molars fractured and one had to be replaced. The failure was again due to very low clearance and insufficient space due to implant placement. In one case, the abutment also failed. None of the three- or four-unit bridges fractured. THE DENTAL ADVISOR has been documenting the failure of ceramics for over 30 years and *BruxZir* has by far the lowest failure rate at four years.

Resistance to Marginal Discoloration

Only five of the *BruxZir Solid Zirconia Crowns and Bridges* restorations (0.5%) exhibited slight marginal discoloration at four years (Figure 3). The opacity of the crowns helps camouflage most staining or microleakage. Also staining is a function of the bonding agent or cement rather than the zirconia.

Wear Resistance

Almost no wear was observed on *BruxZir Solid Zirconia Crowns and Bridges* restorations and very minimal wear was observed on opposing natural dentition at four years (Figure 3). More wear was visible on gold crowns opposing *BruxZir* restorations.

Retention

Thirty-nine crowns (2.8%) out of the 1392 *BruxZir Solid Zirconia Crowns and Bridges* crowns debonded and required recementation (Figure 3). This debonding rate is slightly higher (2.8% vs 2.0%) when compared to non-zirconia crowns that THE DENTAL ADVISOR has documented over time. Regular use of zirconia primers could result in a reduction of the debonding rate.

Conclusions

Over the four-year evaluation period, *BruxZir Solid Zirconia Crowns and Bridges* have proven to be excellent restorations with respect to esthetics and dependability. *BruxZir Solid Zirconia Crowns and Bridges* received a 98% clinical performance rating.

"I have been using BruxZir crowns for almost five years and I have not been disappointed - neither have my patients. It is a great value."

Filtek Bulk Fill Posterior Restorative

++++ 1/2

3M

www.3M.com/dental

Description

Filtek Bulk Fill Posterior Restorative is a single-step composite that can be placed in 5 mm increments. This bulk-fill composite eliminates the need for expensive dispensing devices, additional layers and multiple steps, giving dentists a fast and easy option for direct restorations. Its two novel methacrylate monomers act to lower polymerization stress and enables bulk placement without sacrificing strength or wear resistance. **Filtek Bulk Fill Posterior Restorative** utilizes the same nanofiller technology of other Filtek restoratives. **Filtek Bulk Fill Posterior Restorative** is available in capsule or syringe delivery in five shades: A1, A2, A3, B1, and C2. **Filtek Bulk Fill Posterior Restorative** was evaluated by 40 consultants in 1380 uses. This bulk fill composite received a 91% clinical rating.

Product Features

Filtek Bulk Fill Posterior Restorative has an adequate depth of cure so that most posterior restorations can be completed in a single layer. The composite is easy to dispense from capsules and adapts well to cavity walls. The texture is a little waxy, and the placement instrument may drag on the surface during sculpting. Final anatomy is easy to achieve with a diamond during finishing, and the composite polishes to a smooth surface with standard rotary instruments. The available shades are adequate for posterior use, and the translucency allows good blending



Consultants' Comments

"I use my standard technique with a sectional matrix and got excellent contacts."

"Handling and esthetics of Filtek Bulk Fill Posterior Restorative is very good - highly recommended to anyone who wants to use a posterior bulk-fill technique."

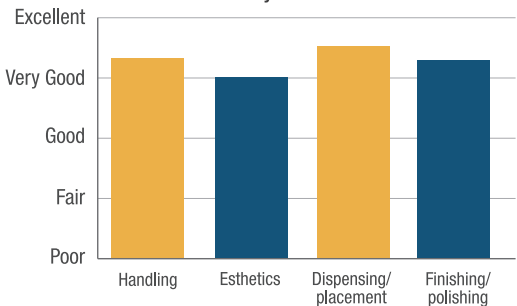
"Increases my efficiency by placing restorations in one increment."

"Adapts well without slumping."

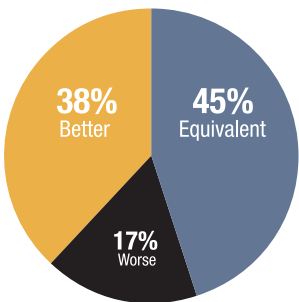
"Radiopacity could be higher."

with enamel. In deep restorations or stained teeth, the translucency creates a gray appearance. **Filtek Bulk Fill Posterior Restorative** exhibits radiopacity so that it is visible on radiographs.

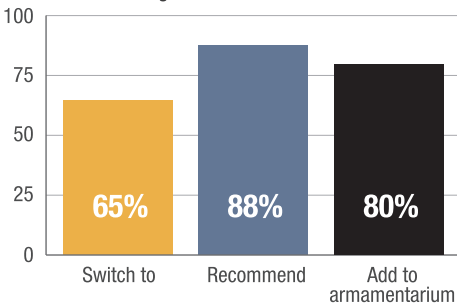
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Elipar™ DeepCure-S



+++++

3M

www.3M.com/dental

Description

Elipar™ DeepCure-S LED curing light has optimized optics for a deep, uniform cure even when perfect light positioning is difficult. **Elipar DeepCure-S** provides a more collimated and uniform beam as well as better light uniformity and intensity distribution at clinically relevant distances. These features help to compensate for slight movements, consistently allowing the light to provide a higher depth of cure. The **Elipar DeepCure-S** is designed with an optimal angle and height, providing comfort and accessibility for both the patient's and practitioner's benefit. The housing of the curing light is seamless, ventless stainless steel with a glass ceramic coating. The charging base contains a built-in intensity meter, and the light is fan free for quiet operation. The **Elipar DeepCure-S** operates at a wavelength of 430-480 nm and an intensity of 1,470 mW/cm². Pre-set cure times are: 5, 10, 15, and 20 seconds, one-second tack cure, and continuous. The 10 mm light guide is autoclavable. **Elipar DeepCure-S** was evaluated by 13 consultants in 457 uses. This light curing unit received a 96% clinical rating.

Suggested Retail Cost

\$1,788.00/per unit

Product Features

Elipar DeepCure-S is an excellent curing light for restorative procedures. The design is simple with activation and setting buttons separated to avoid confusion during use. The high output gives confidence of a complete cure, and the tack-curing feature gives a quick burst of light to gel resin cements. While the metal housing adds some weight to the unit, it gives a feeling of sturdiness and is smooth and easy to disinfect.

The high output of **Elipar DeepCure-S** provides a quick cure,



Consultants' Comments

"The stainless steel housing is easy to keep clean."

"No noise."

"Simple programming has basic functions."

"Unit is heavier than some others but more durable."

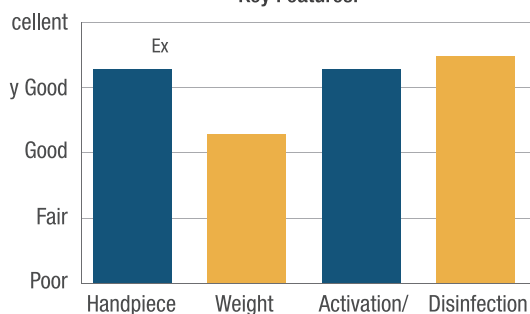
"A vertical docking station would save space on the countertop."

but can warm the teeth and gingival tissues. Curing distances are influenced by access, matrix position and depth of material. Light output that addresses these issues enhances patient care by promoting properly cured restorations.

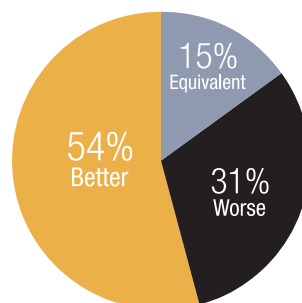
Clinical Tip

- Use caution when curing near the gingiva; the patient may feel heat.

Key Features:



Compared to Competitive Products:



Elipar DeepCure-S
light curing unit
received an overall
96% clinical rating.

Tooth & Gums Tonic®

Dental Herb Co.
www.dentalherb.com
(800) 747-4372

Description

Tooth & Gums Tonic® is a professional strength, all-natural alternative to traditional periodontal treatments such as chlorhexidine. The Tonic is alcohol-free and non-staining, providing dental practitioners with a versatile antimicrobial rinse that is ideal for both initial treatment and long-term periodontal maintenance. **Tooth & Gums Tonic** is indicated for: periodontal care, controlling gum inflammation and bleeding, laser gum surgery, post-implant healing, restorative and cosmetic procedures, dry mouth, mouth sores, and chronic halitosis. Ingredients include a proprietary blend of essential oils and herbal extracts in a water-based solution. **Tooth & Gums Tonic** is available to patients through dental professionals. It is supplied to dentists in cases of 18 oz bottles for patient home care as well as a 64 oz. bottle with pump for operator use. **Tooth & Gums Tonic** was evaluated by 29 consultants who prescribed it to 974 patients. This oral rinse received a 96% clinical rating.



Consultants' Comments

- "A good alternative to chlorhexidine."
- "Reduces inflammation during pregnancy and it is safe to use."
- "Great for orthodontic patients since it does not stain."
- "Patients had less bleeding during prophylaxis if they had been using **Tooth & Gums Tonic**."
- "Reduced halitosis in patients with dry mouths."
- "Strong mint taste."
- "A measuring cup on the cap would be helpful."

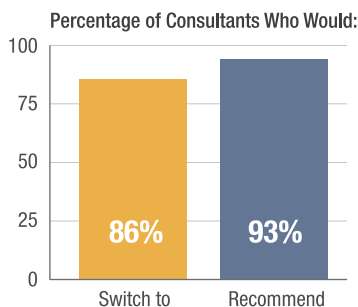
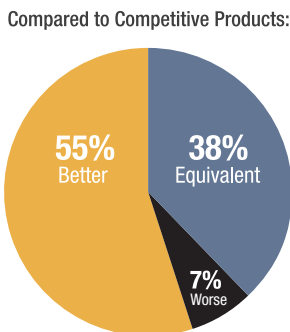
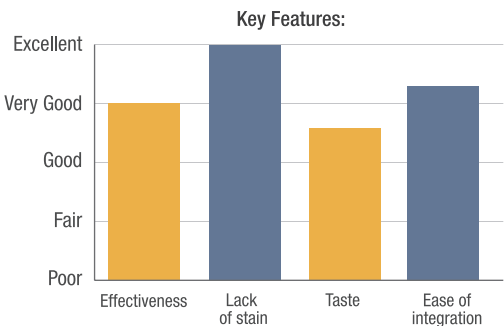
Consultants prescribed **Tooth & Gums Tonic** for its full range of indications and found it was very easy for patients to integrate into their oral care routines, enhancing compliance. The majority used it for treatment of inflammation/gingivitis and associated halitosis. **Tooth & Gums Tonic** has a strong mint taste that was liked by most users, but some found the taste to be too intense. It is safe to use on a daily basis for prevention and maintenance and can reduce inflammation. Orthodontists found it useful to reduce gingivitis around brackets without causing staining like chlorhexidine.

Product Features

Tooth & Gums Tonic is an efficacious antimicrobial rinse that provides a much needed solution to long term periodontal maintenance. The essential oil based Tonic is alcohol-free, non-staining, and meets the growing demand for natural products.

Clinical Tips

- Shake bottle before use.
- Have patients start using it two weeks before you prep crown-and-bridge cases; continue until the case is seated.
- Ideal for pre and post procedural rinsing.





Heraeus Kulzer

www.heraeusdentalusa.com

Description

iBOND Universal is an 8th-generation universal bonding agent. This light-cured adhesive is compatible with self-etch, total-etch or selective etch techniques. **iBOND Universal** enables bonding of composite materials, precious metals, non-precious metals, zirconia and silicate ceramic and is compatible with light-cure, dual-cure and self-cure materials without the need for a dual-cure activator. **iBOND Universal** offers easy and precise application and the ability to intraorally restore fractures and chips as an effective, economical and efficient alternative to replacement. Restorations with zirconia, precious and non-precious alloys and composites can be repaired intraorally. The **iBOND Universal** bottle has a new drop-control dispenser that allows clinicians to apply just as much or as little bonding agent as needed. The notched bottle design prevents unwanted waste and mess, allowing for an efficient and controlled application, with up to 220 drops per bottle. **iBOND Universal** was evaluated by 32 consultants in 814 uses. This universal bonding agent received a 98% clinical rating.

Bond strength of iBOND Universal in self-etching mode*

Dentin	32 MPa
Enamel	23 MPa

*As tested by THE DENTAL ADVISOR

Product Features

iBOND Universal offers excellent bond strength with clinical ease of use. The viscosity is ideal for wetting the tooth without pooling, leaving a low film thickness. The acetone solvent evaporates quickly when air is applied to the treated tooth, leaving a mild odor. The new dropper bottle allows dispensing smaller drops, preventing wasted material. The shape of the nozzle prevents drips, keeping the bottle neat and clean. The ability to use **iBOND Universal** with self- and dual-curing composites and cements adds to the versatility of this product. The only additional material needed is **iBOND Ceramic Primer** when bonding to ceramics. Having one adhesive for use with all restorative materials simplifies the armamentarium and contributes to clinical success.



Suggested Retail Cost

\$134.17 per 4 mL bottle

Consultants' Comments

"Easy to use with confidence."

"No more sticky bottles."

"Viscosity is perfect."

"Storage at room temperature is convenient."

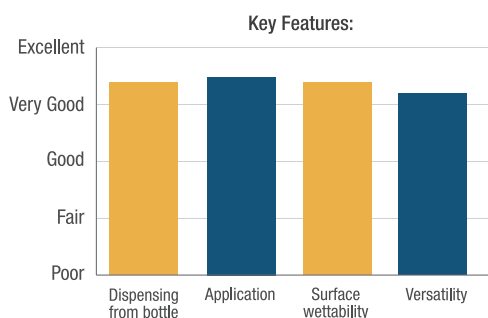
"Works well for desensitizing root surfaces."

"Versatile material. It handles all of my bonding needs."

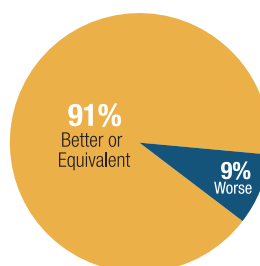
"Light yellow color."

Clinical Tips

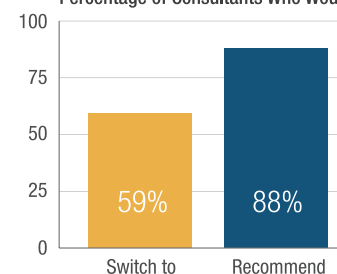
- Apply more pressure on the bottle for a larger drop and less pressure for a smaller drop.
- To bond and repair silica-based ceramics, apply iBOND Ceramic Primer to the ceramic prior to placing the adhesive.
- For uncut enamel, etch with phosphoric acid before applying iBOND Universal.
- For direct restorations, scrub adhesive into the preparation for 20 seconds, dry, and light cure 10 seconds.



Compared to Competitive Products:



Percentage of Consultants Who Would:



Bluephase® Style

Ivoclar Vivadent, Inc

(800) 533-6825, (716) 691-0010

www.ivoclarvivadent.com



Description

Bluephase® Style is a cordless LED curing light designed with “polywave” broadband spectrum technology making it suitable for the polymerization of light-curing dental materials between the wavelengths of 385-515 nm. This includes restoratives, bonding agents/adhesives, bases, liners, fissure sealants, temporaries, and luting materials for brackets and indirect restorations. It has a light intensity of 1100 mW/cm² and curing time selections of 10, 15, 20 and 30 seconds. The lithium-polymer battery is manufactured to last approximately 2 ½ years, takes approximately 2 hours to completely charge and has a total curing capacity of 20 minutes. The unit includes an induction-charging base with corded operation of the light as an option. **Bluephase Style** is available with blue, gray or pink color bands and includes a shortened 10-mm light probe, three anti-glare cones, 50 protective sleeves, lithium polymer battery, charging base, and power supply cord. **Bluephase Style** was evaluated by 14 consultants in 605 uses. This LED curing light received a 96% clinical rating.



Consultants' Comments

“Lightweight and ergonomically friendly.”

“Easy to get in tight spaces.”

“Easy, stable docking.”

“Quiet operation.”

“Illuminated docking station has a high-tech appearance.”

Suggested Retail Cost

\$1,440.00/unit

Equipment Features

Bluephase Style is a slim, lightweight curing light with comfortable ergonomics. The pen-style light is designed for simple use and has only two buttons. One button changes the time setting and the other is used for activation. The activation button is sensitive, requiring the lightest touch. The display is easy to read as it counts down the time. Consultants found this light reached posterior teeth well. The inductive charging does not use battery contacts so the light unit drops in place in any orientation. Forty-three percent of consultants rated **Bluephase Style** better than other LED curing lights they were using and 36% rated it equivalent. Eighty-six percent would switch to **Bluephase Style** and would recommend it to a colleague.

Companion Product ►► **Bluephase® Meter II**

It's crucial that the light intensity of curing lights is tested on a regular basis to ensure that the polymerization of the dental materials is sufficient. The new **Bluephase® Meter II** is the most accurate dental radiometer on the market. Due to its newly developed measuring principle **Bluephase Meter II** is the first dental radiometer suitable to check the light intensity of all available curing lights with very high precision, instantly and without restriction. Being a light-weight portable device with ergonomic design, it is the ideal solution for daily mobile use.



SPECIAL THANKS TO:

Select Senior Clinical Consultants (Over 20 years):

J. Amara, CT · R. Fisher, OH · W. Gregory, MI · E. Katkow, MD · J. Lockwood, MI · J. Mayer, OH · W. Nagy, TX · G. Poy, MI · J. Shamraj, MI · R. Trushkowsky, NY · P. Yaman, MI

Senior Clinical Consultants (15-19 years):

K. Baker, TX · F. Bertram, PA · L. Brimhall, MT · M. Briskin, NY · L. Brown, MI · R. Ciccone, MI · C. Colbert, MI · M. Conrad, PA · J. Dingman, WI · J. Doueck, NY · M. Dwoskin, MI · M. Eannaccone, NY · R. Engle, IL · K. Fairbanks, MI · K. Fischer, IN · G. Franco, NY · N. Garlisi, OH · K. Goodman, MI · S. Graber, IL · P. Grandsire, NY · E. Gutman, NY · K. Hamlett, TX · S. Harlock, MI · G. Hart, OH · R. Herwig, KS · J. Kaminski, MI · R. Kaprielian, NJ · M. Kastner, OH · M. LaMarche, WA · J. Leitner, MI · R. Lezell, MI · M. Livernois, NC · B. Manne, FL · N. Mansour, MI · N. Markarian, CA · J.W. Mikesell, IL · G. Mosso, PA · E. Mosso, PA · E. Odenweller, OH · J. Paris, TX · D. Parris, GA · D. Peterson, MD · T. Pieper, WY · D. Pitak, MI · V. Plaisted, NY · D. Qualliotine, NC · C. Reed, MI · K. Schwartz, FL · J. Shea, MO · B. Shumaker, NJ · B. Sims, NY · H. Tetelman, OH · C. Trubschenck, CA · S. Ura, NH · W. Walcott, MI · L. Wee, MI · D. Wojtowicz, MI · M. Zahn, MI

Clinical Consultants (14 years or less):

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